

NEW SAWFLIES OF THE GENERA *DILOCERUS* CURTIS AND
THEMOS NORTON FROM SOUTH AMERICA
(HYMENOPTERA: ARGIDAE)

DAVID R. SMITH

Systematic Entomology Laboratory, IIBIII, Agr. Res. Serv., USDA,
c/o U. S. National Museum, Washington, D. C. 20560

ABSTRACT—Three species of Argidae are described: *Dielocerus diasi*, n. sp., both adult and larva, reared from *Sclerolobium aureum* in Brazil; *Themus olfersii* (Klug) reared from *Eriotheca pubescens* in Brazil; and *Themus boliviensis*, n. sp. from Bolivia.

Few Neotropical sawflies have been reared and the host recorded; consequently, it is a pleasure to describe a new species and redescribe another from bred material. The 2 species represent 2 genera of Argidae, *Dielocerus* Curtis and *Themus* Norton, both sent to me for identification by Braulio F. de Souza Dias, Universidade de Brasília, Brasília, D. F., Brasil, who is doing biological work on them. I also take this opportunity to describe a new *Themus* from Bolivia, the specimen of which is in the U. S. National Museum collection. Both genera discussed here are restricted to the New World tropics.

Dielocerus Curtis

Dielocerus Curtis, 1844. Trans. Linn. Soc. London 19:248. Type-species: *Dielocerus ellisii* Curtis. Desig. by Rohwer, 1911.
Dielocera Cameron, 1878. Trans. R. Entomol. Soc. London, p. 147. Emend.
Dieloceros Konow, 1905. In Wytsmann, Gen. Ins., fasc. 29, p. 23. Emend.

This genus is a member of the Dielocerinae which is distinguished from other subfamilies of Argidae by the following combination of characters: absence of preapical spines on the hindtibia, presence of intercostal vein in the forewing, radial cell of forewing closed at apex, palpi shorter than eye length, eyes far apart with distance between eyes below longer than length of an eye. Three other genera are included in the Dielocerinae: *Topotrita* Kirby, *Mallerina* Malaise, and *Digelasinus* Malaise. *Dielocerus* may be separated from all of them by the partially obliterated anal cell of the hindwing; the other genera have this anal cell complete. About 9 species have been included in *Dielocerus*, though a number may belong to other genera of Argidae. The most discussed species has been *Dielocerus formosus* (Klug) (syn.: *Dielocerus ellisii* Curtis, *Dielocera curtisi* Cameron). The following species reared by Mr. Dias is allied to *formosus*.

Dielocerus diasi Smith, new species

Female: Length, 14.0 mm. First and second antennal segments orange, third segment black with small spot of orange at extreme base. Head and mouthparts

orange; apex of each mandible black. Thorax orange except for black metanotum with small orange spot behind each cenchrus. Legs all orange except for longitudinal black stripe on outer surface of hindtibia. Abdomen black with basal sternites pale orange, apical three sternites black; sheath black with pale spot at base. Forewing fasciate, hyaline with dark black area at base, broad black band at center extending width of wing and black spot at extreme apex; costa yellow, veins and stigma black. Hindwing more uniformly lightly infuscated, paler toward apex; veins and stigma black.

Length of antenna subequal to head width; third segment laterally flattened; first and second segments each longer than broad. Clypeus circularly incised for half its medial length; malar space equal to diameter of front ocellus. Head broadened behind eyes in dorsal view; postocellar area elevated, about one and a half times broader than long, with deep furrows. Tarsal claws simple. Forewing with notch at apex of radial cell, not evenly rounded (fig. 1); hindwing with vein 2A obliterated. Sheath uniformly slender from above, small scopa at apex; in lateral view, straight above, rounded below (fig. 5). Lancet long, with 29 to 32 segments, apical segments very narrow with annuli crowded close together; each serrula flat, with 5 to 7 coarse basal teeth (fig. 6).

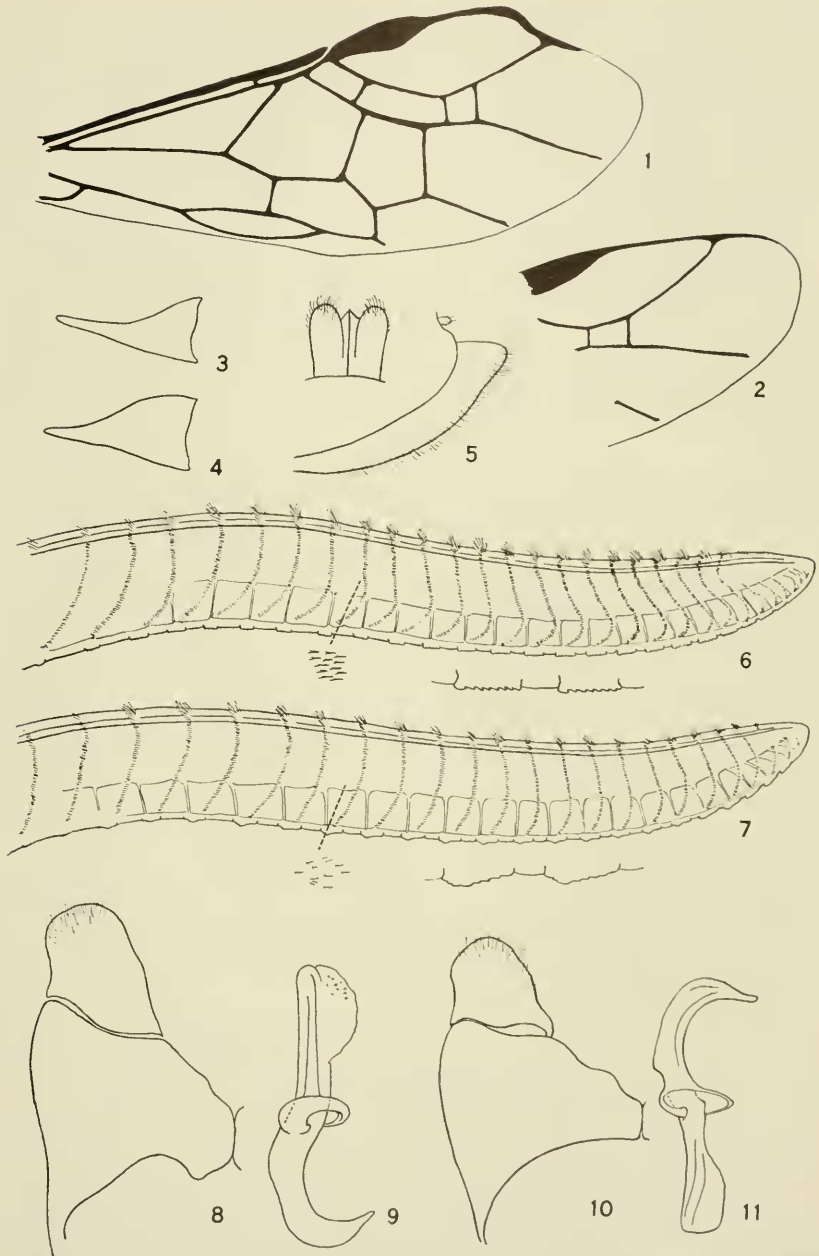
Male: Length, 11.5 to 12.0 mm. First and second antennal segments orange, third segment black, sometimes with extreme base pale orange. Head orange, apex of each mandible black. Thorax orange with metanotum, mesoscutellum, mesonotal lateral lobes, and spot on posterior of mesoprescutum black. Legs entirely orange. Abdomen black with sternites 1 to 6 mostly orange. Wings uniformly hyaline to very slightly infuscated; costa and upper margin of stigma of forewing white, remainder of stigma and remaining veins black. Third antennal segment furcate; length of antenna a little longer than head width. Hypandrium truncated at apex. Harpe and parapenis as in fig. 8; penis valve narrow, curved at base, as in fig. 9. Other structural features as for female.

Larva (Last feeding stage): Length, 25 to 32 mm. Head amber; amber-spotted on yellow background on top and in front, solid amber on sides, around and below eye; eyespot and apex of each mandible black. Body whitish (preserved specimens) with tubercles and body plates dark brown to black. Body ornamentation consisting of large to small dark plates with small tubercles arising from most of them.

Head with short, scattered setae, longer and more numerous between each mandible and eye. Antenna with single segment round, flat. Clypeus with 2 long setae on each side; labrum with 2 long setae on each side; labrum with deep emargination at center; epipharynx with 14 to 17 spines on each half, some of inner spines furcated at apices, spines arranged semi-circularly (fig. 15). Maxillary palpus 4-segmented, first segment appearing as lobe on inner margin of second segment; second maxillary segment, palpifer, and stipes each with 1 seta; lacinia with 5 or 6 groups of spines, each group with one or more stout stems, branching into 5 or 6 spines (fig. 16). Labial palpus 3-segmented; pre-

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Fig. 1, forewing of *Dielocerus diasi*. Fig. 2, apex of forewing of *D. formosus*. Fig. 3, mandible of *D. formosus*. Fig. 4, mandible of *Themos olfersii*. Fig. 5, sheath of *Dielocerus diasi*, dorsal and lateral. Fig. 6, lancet of *D. diasi*, showing



closeup of texture and closeup of 2 serrulae. Fig. 7, lancet of *D. formosus*, showing closeup of texture and closeup of 2 serrulae. Fig. 8, harpe and parapenis of *D. diasi*. Fig. 9, penis valve of *D. diasi*. Fig. 10, harpe and parapenis of *D. formosus*. Fig. 11, penis valve of *D. formosus*.

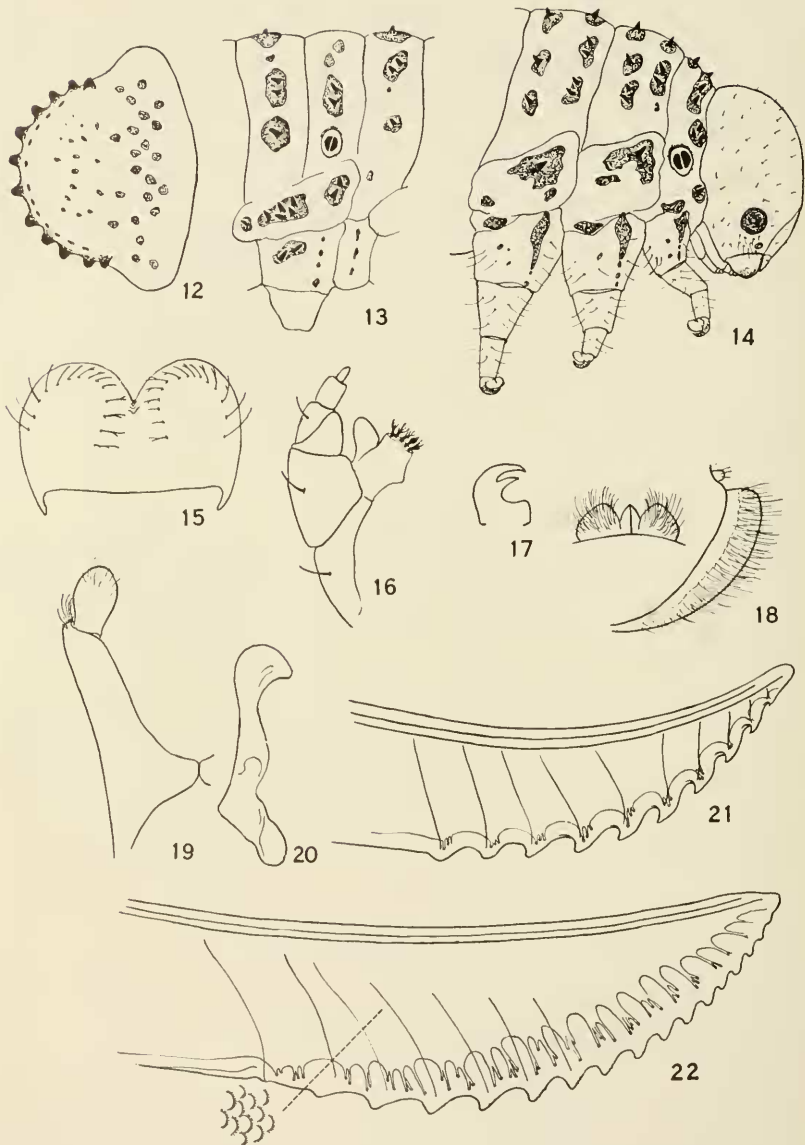


Fig. 12-16, larva of *Dielocerus diasi*. 12, 10th tergum, dorsal view. 13, 3rd abdominal segment, lateral view. 14, head and thorax. 15, epipharynx. 16, maxilla. Fig. 17, tarsal claw of *Themus olfersii*. Fig. 18, sheath of *T. olfersii*, dorsal and lateral views. Fig. 19, harpe and parapenis of *T. olfersii*. Fig. 20, penis valve of *T. olfersii*. Fig. 21, lancet of *T. boliviensis*. Fig. 22, lancet of *T. olfersii* and closeup of texture. Figures 21 and 22 drawn to same scale.

mentum without setae. Mandible worn, teeth not discernible; each mandible with 1 seta on outer surface.

Ornamentation of thorax as in fig. 14. Prothoracic spiracle winged. Each thoracic leg normal, 5-segmented; each leg with tarsal claw; large lobe adjacent to each tarsal claw. Segments of each leg with scattered long setae.

Abdominal segments 1 to 9 each 3-annulate; tubercles arranged as in fig. 13. Spiracles on segments 1 to 7 each winged, and each set in circular depression. Prolegs present on abdominal segments 2 to 6, largest on segment 2, decreasing in size toward apex. Tenth tergum with about 14 stout tubercles at apex (fig. 12).

Holotype: Female, Brasília, D. F., Brasil, reared, emerged in lab XIII-IX 1972, B. Dias, collector. Deposited in the Laboratório de Zoologia, Universidade de Brasília, Brasília, D. F., Brasil.

Paratypes: Same data as for holotype (5 ♀♀, 6 ♂♂); same locality, 21-IV-1973 (8 larvae). Deposited in the U. S. National Museum and Universidade de Brasília.

Host: These specimens were reared from larvae feeding on *Sclerobium aureum* (Tul.) (Leguminosae-Caesalpinae), a common savanna tree around Brasília (Dias, 1974).

Discussion: This species is similar to *Dielocerus formosus* (Klug) in both size and coloration; however, the female of *formosus* has the hindtarsus black and the costa of the forewing black, and the male of *formosus* has the head above the antennae black, the mesonotum entirely black, the costa of the forewing black, and the apex of the hindtarsus black. Structural features separating the two species are the contour of the apex of the forewing (compare fig. 1 and 2), the lancets (compare fig. 6 and 7), and the male genitalia (compare fig. 8 to 11).

Although other species have been described in *Dielocerus*, *diasi* is very unlike any of them. These other are *D. carbonarius* (Cameron) (Brazil), *D. consors* (Kirby) (Brazil), *D. crassus* Cameron (Mexico), *D. fasciatus* (Enderlein) (Ecuador), *D. imitatrix* (Cameron) (Guatemala), *D. serratus* (Kirby) (Brazil), *D. sulcicornis* (Cameron) (Brazil), and *D. violaceus* (Kirby) (Brazil). I doubt that all of these actually belong in *Dielocerus*.

The larva cannot be compared with those of other South American Argidae since none is known. The larva keys to the genus *Arge* in my key to North American larvae (Smith, 1972), a genus to which it is remarkably similar. It differs from *Arge* larvae that I have examined by the flat antennal segment, more numerous dark plates with small tubercles on the body, and many-branched spines of the lacinia. The Arginae and Dielocerinae may be more closely related than indicated in the classification based on adults, a scheme which may have to be revised when more larvae are known.

Mr. Dias, for whom the species is named, intends to publish on the biology of this species and may indicate it as "*Dielocerus* sp. a."

Themos Norton

Themos Norton, 1867. Trans. Amer. Entomol. Soc. 1:58. Type-species: *Themos hyalinus* Norton. Monotypic.

Themus Enderlein, 1920 (1919). Sitz. Gesell. Naturf. Freunde Berlin 9:118. Emend.

This genus, along with *Adierna* Enderlein, forms the subfamily Theminae. The subfamily is separated from other Argidae by the absence of preapical spines on the hindtibia, absence of an intercostal vein in the forewing, the extremely broad mandibles appearing inflated at their bases (fig. 4), reduced mouthparts with the labium having no lobes and the maxillary and labial palpi each three-segmented, and the presence of bifid tarsal claws on at least one pair of legs. The main distinction between the genera is that *Themos* has each tarsal claw bifid and *Adierna* has only the front tarsal claws bifid, the claws on the midlegs and hindlegs being simple with a large basal lobe.

Malaise (1955) gave a key to four species of *Themos*. One species, *T. olfersii* (Klug) was reared by Mr. Dias and is briefly described below, and another species from Bolivia is described as new.

Themos olfersii (Klug)

Hylotoma olfersii Klug, 1834. Jahrb. Ins. 1:249.

?*Themos hyalinus* Norton, 1867. Trans. Amer. Entomol. Soc. 1:58. Type lost; synonymy questionable.

Female: Length, 14–15 mm. First and second antennal segments red, third segment black. Head orange; apex of each mandible black. Thorax orange. Legs orange with extreme apex of each tibia and each tarsus entirely black; outer surface of front tarsus pale orange. Abdomen and sheath black, basal sternites partly orange. Wings darkly infuscated except for hyaline apex beyond apex of stigma; veins and stigma black.

Smooth and shining with punctures only on clypeus, supra-clypeal area, and paraantennal fields. Clypeus subtruncate, malar space distinct but less than diameter of front ocellus. Head from above expanded behind eyes; postocellar area only a little broader than long, convex. Each tarsal claw bifid. Sheath in lateral view short and rounded, from above broader than long. Lance extremely broad at base; lancet short and triangular with 17 to 18 serrulae; each serrula moderately deep, narrow, rounded at apex and without distinct subbasal teeth (fig. 22).

Male: Length, 10–11 mm. Antenna pale orange, third segment black at extreme apex; black hairs contrasting with pale color. Head pale orange, black from middle fovea, lateral ocelli, and posterior margin of eye to occiput; black extending on genal area to base of eye. Thorax black with pronotum, peraptera, mesoscutellum, and metascutellum pale orange. Legs black with outer surface of apical half of

front femur and each tarsus except for extreme apex pale orange. Abdomen black, basal sternites sometimes pale orange. Wings uniformly hyaline; veins and stigma black. Third antennal segment furcate. Other structural features as for female. Genitalia as in figs. 19, 20.

Distribution: Known only from Brasil: São Paulo (Ypiranga and Campinas) (Malaise, 1955); Brasília.

Host: *Eriotheca pubescens* (Mart. and Zucc.) (Bombacaceae), a common plant in Brasília (Dias, 1974).

Discussion: A distinctive species, separated by the infuscated wings, black abdomen, and pale orange femora and tibiae in the female. The description of the female is based on my examination of the type through the courtesy of E. Königsmann, Zoological Museum of Berlin.

Themos boliviensis Smith, new species

Female: Length, 14 mm. First antennal segment orange, second and third antennal segments brownish to infuscated black. Head orange; apex of each mandible black. Thorax and abdomen entirely orange. Legs orange with each tibia and tarsus infuscated black, darker at apex of each tibia. Wings darkly infuscated except for hyaline apex beyond apex of stigma; stigma and veins black, costa of forewing pale orange toward basal third.

Smooth and shining species, punctures distinct only on clypeus, supraclypeal area, and paraantennal fields. Length of antenna slightly greater than head width. Clypeus subtruncate, supraclypeal area elevated, malar space distinct but less than diameter of front ocellus; head from above expanded behind eyes; postocellar area convex, a little broader than long. Each tarsal claw bifid (fig. 17). Sheath short and rounded in lateral view; in dorsal view broader than long (fig. 18). Lance extremely broad at base; lancet short and triangular, with 10 to 11 serrulae; each serrula deep, apex pointed and directed anteriorly, without subbasal teeth (fig. 21).

Holotype: Female, "Rosario, Lake Rogagua, Bolivia, Nov., M. R. Lopez, coll." Lake Rogagua is in the state of Beni. U. S. National Museum type no. 73062.

Discussion: This striking species is separated from *laqueatus* Enderlein and *nigronotum* Malaise by the darkly infuscated wings and from *olfersii* and *concinus* Mocsary by the orange abdomen. The lancets of *olfersii* and *boliviensis* are compared in figs. 21 and 22.

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